ABSTRACT OF THE INVENTION

A feedback-based adaptive network is described wherein at least a portion of the network elements report operating information relating to network conditions to a centralized data store. The information which is reported to the data store is analyzed by a policy engine which includes a plurality of application specific plug-in policies for analyzing selected information from the data store and for computing updated control information based upon the analysis of the information. The updated control information is fed back to selected network elements to thereby affect operation of the selected elements. Typically, when the operation of a network element has been affected, its corresponding operating information will change. The new or changed network element operating information is then reported to the data store and analyzed by the policy engine. The policy engine may then generate new or updated control information for affecting the operation of selected elements in the network. In this way, the dynamic and automatic feedback control of network elements is provided in order to allow the network to adapt to changing conditions. Events relating to changing conditions in the network may be reported to selected elements in the network using an event notification service. Additionally the adaptive, feedback-based network of the present invention may include a network quality monitoring system for evaluating performance characteristics or other aspects of the network based upon predetermined standards or criteria. If it is determined that a particular characteristic of the network does not conform with the standards established for that characteristic, the policy which controls that particular characteristic of the network may be automatically and dynamically modified to thereby affect the network performance.